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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,237	08/23/2001	Dale T. Platteter	D/A0A73	1681

7590 02/10/2005

Patrick R. Roche
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Cleveland, OH 44114-2518

EXAMINER

CHEN, TSE W

ART UNIT	PAPER NUMBER
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2116

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Interview Summary	Application No.	Applicant(s)	
	09/938,237	PLATTETER ET AL.	
	Examiner	Art Unit	
	Tse Chen	2116	

All participants (applicant, applicant's representative, PTO personnel):

(1) Tse Chen. (3) Alan Brandt.
 (2) Lynne Browne. (4) ____.

Date of Interview: 04 February 2005.

Type: a) ☒ Telephonic b) ☐ Video Conference
 c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.
 If Yes, brief description: _____.

Claim(s) discussed: 1.

Identification of prior art discussed: Yamanaka, US Patent 5995771 and Miyawaki, US Patent 4807259.

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant disagrees with Examiner's cited motivation for combining Yamanaka and Miyawaki [see attachment of Proposed Response After Final Rejection].

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.



LYNNE H. BROWNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

 Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Applicant Initiated Interview Request Form

Application No.: 09/938,237 First Named Applicant: Dale T. Platteter
Examiner: Chen, Tse W. Art Unit: 2116 Status of Application: Final Rejection

Tentative Participants:

(1) Alan Brandt (2) Tse Chen
(3) Lynne Browne (4) _____

Proposed Date of Interview: Friday - 2/4/05 Proposed Time: 10:00 (AM/PM)

Type of Interview Requested:

(1) ☒ Telephonic (2) ☐ Personal (3) ☐ Video Conference

Exhibit To Be Shown or Demonstrated: ☒ YES ☐ NO

If yes, provide brief description: Proposed Response After Final Rejection (Amd. B)

Issues To Be Discussed

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) <u>Motivation to Combine</u>	<u>1-21</u>	<u>Miyawaki, Yamanaka</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(2) <u>Rejection</u>	<u>1,21</u>	<u>Miyawaki, Yamanaka</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (NOT DISCUSSED)
(3) <u>Rejection</u>	<u>13,15</u>	<u>Miyawaki, Yamanaka, Cheung</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> "
(4) <u>Finality</u>	<u>1-21</u>	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> "
<input type="checkbox"/> Continuation Sheet Attached					

Brief Description of Arguments to be Presented:

(1) Motivation to combine Yamanaka with Miyawaki is lacking.
(2), (3) Independent claims are distinguishable from references cited.
(4) Request to withdraw finality of rejection.

An interview was conducted on the above-identified application on 2/4/05.
NOTE: This form should be completed by applicant and submitted to the examiner in advance of the interview (see MPEP § 713.01).

This application will not be delayed from issue because of applicant's failure to submit a written record of this interview. Therefore, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible.

Applicant/Applicant's Representative Signature
Alan C. Brandt 216 861 582
Typed/Printed Name of Applicant or Representative
50,218
Registration Number, if applicable

Examiner/SPE Signature
LYNNE H. BROWNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

This collection of information is required by 37 CFR 1.133. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

CERTIFICATE OF FIRST CLASS MAILING

I hereby certify that this paper and/or fee is being deposited with the United States Postal Service as First Class Mail service on _____ and is addressed to the MAIL STOP AMENDMENT, Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By: _____
Laurie A. Boylan

*Attachment
to Interview
Summary*

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S) : Dale T. Platteter et al.
TITLE : SYSTEM ARCHITECTURE AND
METHOD FOR SYNCHRONIZATION
OF REAL-TIME CLOCKS IN A
DOCUMENT PROCESSING
SYSTEM
APPLICATION NO. : 09/938,237
FILED : August 23, 2001
CONFIRMATION NO. : 1681
EXAMINER : Tse W. Chen
ART UNIT : 2116
LAST OFFICE ACTION : November 30, 2004
ATTORNEY DOCKET NO. : A0A73
XERZ 2 00424

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PROPOSED RESPONSE AFTER FINAL REJECTION

(AMENDMENT B)

Dear Sir:

Responsive to the Office Action mailed November 30, 2004, please amend the above-identified application as follows.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 7 of this paper.

AMENDMENTS TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1. (Previously amended) A document processing system comprising:

a marking engine that marks a sheet to form at least a portion of a document, the marking engine including a controller, the controller including a master clock and logic for generating a discrete clock synchronization interrupt signal;

a resource that transfers the sheet to the marking engine or receives the sheet from the marking engine, the resource including a slave clock related to operational timing of the resource and circuitry for receiving and processing the discrete clock synchronization interrupt signal; and

a control bus, interconnecting the resource and the controller, for distributing the discrete clock synchronization interrupt signal.

2. (Original) The document processing system of claim 1 wherein the resource circuitry includes a processor for determining the compatibility of the slave clock with the master clock.

3. (Original) The document processing system of claim 1 wherein the resource circuitry includes a processor for adjusting the slave clock to provide for compatibility with the controller.

4. (Original) The document processing system of claim 3 wherein the compatibility between the resource and the controller provides hard real-time service.

5. (Original) The document processing system of claim 3 wherein the compatibility between the resource and the controller is such that the slave clock is synchronized to within one (1) clock cycle of the master clock.

6. (Previously amended) The document processing system of claim 1, including a plurality of resources, each resource including a slave clock related to operational timing of the resource and circuitry for receiving and processing the discreet clock synchronization interrupt signal, and wherein the control bus interconnects each resource with the controller thereby distributing the discreet clock synchronization interrupt signal to each resource.

7. (Original) The document processing system of claim 6 wherein the circuitry in each resource includes a processor for adjusting the slave clock associated with the resource to provide for compatibility with the controller.

8. (Original) The document processing system of claim 7 wherein the compatibility between the resources and the controller provides hard real-time service.

9. (Previously amended) The document processing system of claim 7 wherein the compatibility between the resources and the controller is such that each slave clock is synchronized to within one (1) clock cycle of the master clock.

10. (Original) The document processing system of claim 6 wherein the resources include one or more finishing devices.

11. (Original) The document processing system of claim 6 wherein the resources include one or more feeding devices.

12. (Original) The document processing system of claim 6, further including a 10 base T network for interconnecting the resources and the controller.

13. (Previously amended) In a document processing system comprising a marking engine that marks a sheet to form at least a portion of a document, the marking engine further including a controller, the controller further including a master clock, a resource that transfers the sheet to the marking engine or receives the sheet from the marking engine, the resource further including a slave

clock related to operational timing of the resource, and electrical interconnections connecting the resource to the controller, the electrical interconnections further including a control bus and a network, a method of initially synchronizing the slave clock with the master clock comprising the steps of:

- a) saving a value of the master clock in the controller;
- b) generating a discrete clock synchronization interrupt signal in the controller and distributing the discrete clock synchronization interrupt signal to the resource via the control bus;
- c) receiving the discrete clock synchronization interrupt signal at the resource and saving a first value of the slave clock;
- d) sending a message from the resource to the controller via the network to request the value saved for the master clock;
- e) sending the value saved for the master clock from the controller to the resource via the network;
- f) receiving the value saved for the master clock at the resource;
- g) saving a second value of the slave clock in the resource;
- h) subtracting the first value from the second value to determine a slave clock difference value; and
- i) adding the difference value to the value saved for the master clock to determine a synchronized value for the slave clock and setting the slave clock to the synchronized value.

14. (Original) The method of claim 13, the document processing system including a plurality of resources, each resource further including a slave clock related to operational timing of the resource, and the electrical interconnections further connecting each resource to the controller via the control bus and the network, wherein steps c) through i) are performed for each resource.

15. (Previously amended) In a document processing system comprising a marking engine that marks a sheet to form at least a portion of a document, the marking engine further including a controller, the controller further including a master clock, a resource that transfers the sheet to the marking engine or receives the sheet from the marking engine, the resource further including a slave clock related to operational timing of the resource, and electrical interconnections

connecting the resource to the controller, the electrical interconnections further comprising a control bus and a network, a method of synchronizing the slave clock with the master clock during steady state operation of the document processing system comprising the steps of:

- a) saving a value of the master clock in the controller;
- b) generating a discrete clock synchronization interrupt signal in the controller and distributing the discrete clock synchronization interrupt signal to the resource via the control bus;
- c) receiving the discrete clock synchronization interrupt signal at the resource and saving a value of the slave clock;
- d) sending a message from the resource to the controller via the network to request the value saved for the master clock;
- e) sending the value saved for the master clock from the controller to the resource via the network;
- f) receiving the value saved for the master clock at the resource; and
- g) subtracting the value saved for the slave clock from the value saved for the master clock to determine an error value between the slave clock and the master clock and using the error value in an adjustment algorithm to adjust the slave clock to be synchronized with the master clock.

16. (Original) The method of claim 15 wherein step g) results in synchronization of the slave clock to within one (1) clock cycle of the master clock.

17. (Original) The method of claim 15 wherein steps a) through g) are performed periodically during steady state operation of the document processing system.

18. (Original) The method of claim 17 wherein the periodic interval for performing steps a) through g) during steady state operation of the document processing system is about two seconds.

19. (Original) The method of claim 15, the document processing system including a plurality of resources, each resource further including a slave clock related to operational timing of the resource, and the electrical

interconnections further connecting each resource to the controller via the control bus and the network, wherein steps c) through g) are performed for each resource.

20. (Original) The method of claim 19 wherein step g) results in synchronization of each slave clock to within one (1) clock cycle of the master clock.

21. (Previously amended) An electrophotographic document processing system, operated in a xerographic environment, comprising:

a marking engine that marks a sheet to form at least a portion of a document, the marking engine including a controller, the controller including a master clock and logic for generating a discrete clock synchronization interrupt signal;

a plurality of resources, each resource is associated with transfer of the sheet to the marking engine or receipt of the sheet from the marking engine, each resource including a slave clock related to operational timing of the resource and logic for receiving the discrete clock synchronization interrupt signal, processing the discrete clock synchronization interrupt signal, and synchronizing the slave clock with the master clock; and

electrical wiring interconnecting the resources and the controller for distributing the discrete clock synchronization interrupt signal to the resources.

REMARKS

Applicants have now had an opportunity to carefully consider the Examiner's comments set forth in the Office Action of November 30, 2004.

All of the points raised by the Examiner are addressed herein. Reconsideration of the application is requested. Claims 1-21 remain in the application with this amendment.

The Office Action

Claims 1, 3, 6, 7, 10, 11, and 21 stand rejected under 35 USC § 103(a) for obviousness over U.S. Patent No. 5,995,771 to Miyawaki in view of U.S. Patent No. 4,807,259 to Yamanaka et al. (Yamanaka).

Claim 2 stands rejected under 35 USC § 103(a) for obviousness over Miyawaki in view of Yamanaka and further in view of U.S. Patent No. 6,675,249 to Shimoda et al. (Shimoda).

Claims 4 and 8 stand rejected under 35 USC § 103(a) as being unpatentable over Miyawaki in view of Yamanaka and further in view of U.S. Patent No. 6,343,351 to Lackman et al. (Lackman).

Claim 12 stands rejected under 35 USC § 103(a) as being unpatentable over Miyawaki in view of Yamanaka and further in view U.S. Patent No. 6,704,302 to Einbinder et al. (Eindbinder).

Claims 5, 9, and 13-20 stand rejected under 35 USC § 103(a) as obvious over Miyawaki in view of Yamanaka and further in view of U.S. Patent No. 5,535,217 to Cheung et al. (Cheung).

The Examiner has made the above rejections final.

The Art Rejections

Rejection of Claims 1-21 and Finality of Rejection Does Not Provide Applicants With Fair Opportunity to Identify the Issues and Reply Because Examiner Has Not Properly Communicated the Basis for Rejection.

The Examiner has rejected claims 1-21 under 35 USC § 103(a) for obviousness over various combinations of references in the Office Action of November 30, 2004 and has made these rejections final. The applicants

respectfully request reconsideration of the finality of these rejections because: i) the Examiner has not properly communicated the basis for rejection of the claims so that the issues can be identified as required by MPEP § 706.02(j), ii) the Examiner has not fully and clearly stated the ground for rejection as required by MPEP § 707.07(d), and iii) the Examiner has not designated the particular parts of references that are relied upon for rejection of each claim individually as required by 37 CFR 1.104(c).

For example, according to paragraph 6 of the Office Action the Examiner has rejected independent claim 21 under 35 USC § 103(a) for obviousness over Miyawaki in view of Yamanaka. Then, at paragraph 13, the Office Action refers to findings 4.2, 4.9, and 4.10 as to rejection of claim 21. Paragraph 4 includes paragraphs 4.1-4.41 which are fact findings for support of all rejections in the Office Action. In fact findings 4.2, 4.9, and 4.10, the Examiner identifies certain items that are disclosed in Yamanaka with column, line, and drawing references. Notably, the Examiner's rejection of claim 21 for obviousness over the combination of Miyawaki and Yamanaka is not clearly tied to any specific fact findings from Miyawaki. In a telephone interview with the Examiner on December 29, 2004, the use of fact findings from Miyawaki in rejection of claim 21 was discussed with the applicants' patent counsel. The Examiner explained that any of the Miyawaki fact findings (i.e., 4.38 - 4.41) that are relevant to claim 21 are also relied upon to support rejection of the claim in addition to the Yamanka findings specifically identified in paragraph 13. The Examiner further explained that any fact findings (i.e., 4.1 through 4.41) that are relevant to any particular claim are relied upon to support rejection of that claim. The specific findings referred to by the Examiner in paragraphs 6 through 31 are not necessarily the only findings that support the rejections.

Initially, the applicants were confused as to which specific fact findings supported rejection of certain claims, particularly where rejection was based on a reference without identifying any specific fact findings associated with that reference. After the December 29 telephone interview, it is apparent that the Examiner has forced the applicants to guess which fact findings (i.e., 4.1 - 4.41) are relied upon for rejection of each claim in order to properly frame an argument to support allowance of the claim. The Examiner's Office Action does not designate the particular parts of the references relied upon for rejection of the claims and, therefore, does not provide fully and clearly stated grounds for the rejections. This

does not give the applicants a fair opportunity to reply to the rejections. Based on the foregoing, it is profoundly unfair to the applicants that the Office Action was made final. Accordingly, the applicants respectfully request reconsideration and withdrawal of the finality of the rejection of claims 1-21.

Rejection of Claims 1-21 is Improper Because Examiner Has Not Properly Established Some Suggestion or Motivation to Combine Miyawaki and Yamanaka.

The Examiner has rejected: i) claims 1, 3, 6, 7, 10, 11, and 21 under 35 USC § 103(a) for obviousness over the combination of Miyawaki and Yamanaka, ii) claim 2 under 35 USC § 103(a) for obviousness over the combination of Miyawaki, Yamanaka, and Shimoda, iii) claims 4 and 8 under 35 USC § 103(a) for obviousness over the combination of Miyawaki, Yamanaka, and Lackman, iv) claim 12 under 35 USC § 103(a) for obviousness over the combination of Miyawaki, Yamanaka, and Einbinder, and v) claims 5, 9, and 13-20 under 35 USC § 103(a) for obviousness over the combination of Miyawaki, Yamanaka, and Cheung.

The Examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness (MPEP § 2142). To establish a prima facie case of obviousness, inter alia, there must be some suggestion or motivation, either in the references themselves or in the art, to modify the reference or to combine reference teachings (MPEP § 2143). There are three possible sources for a motivation to combine references: i) the nature of the problem to be solved, ii) the teachings of the prior art, and iii) the knowledge of persons of ordinary skill in the art. (In re Rouffet, 149 F.3d 1350, 1357 (Fed. Cir. 1998); MPEP § 2143.01). Obviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art (MPEP § 2143.01). The Examiner has identified explicit motivation to combine Miyawaki and Yamanaka for claims 1-21 in the Office Action.

As to claim 1, the Examiner points out that Miyawaki did not discuss the details of synchronization between the controller of the marking engine and the resource (para. 7, page 8). Therefore, in order for the Examiner to establish a prima facie case of obviousness for claim 1, Yamanaka must disclose the details of

synchronization that are not discussed in Miyawaki and the Examiner must be identify a suggestion or motivation to combine the synchronization teachings of Yamanaka with the document processing system teachings of Miyawaki.

According to the Office Action, the Examiner finds explicit motivation to combine Miyawaki and Yamanaka in Yamanka and states that "one of ordinary skill in the art would have been motivated to make such a combination in order to provide a way to synchronize operations for practical use [finding 4.18]" (para. 7, page 8). Finding 4.18 states that "Yamanaka teaches the advantage of synchronizing the master and slave clocks within a range of error in order to avoid problems for practical use [col. 1, ll. 56-59]." Col. 1, lines 56-59 in the Background of the Invention section of Yamanaka states "in the time synchronization as described above, it is important that the clock circuits of the master and slave stations are synchronized within a range of error that does not result in a problem for practical use." Apparently this explicit motivation to combine Miyawaki and Yamanaka also applies to claims 2-21. During the December 29 telephone interview, the Examiner stated that Yamanaka continues to be viewed as disclosing a document processing system.

In general, Yamanaka discloses several embodiments of a data transmission and receiving system in the form of a Supervisory Control and Data Acquisition (SCADA) system that includes a master station 1 in communication with multiple remote slave stations 2, 3 (FIGs. 1, 3A, 3B, 5A, 5B). The master station serves as a control station and the slave stations provide input circuits 24, 34 and output circuits 25, 35 for two-way data transmissions to/from, for example, electrical power generating facilities, power transmission facilities, or power substation facilities of various electrical stations located within a broad region (Abstract; col. 1, lines 7-21; col. 2, lines 29-39). In this electrical station example, the master station monitors the facilities via the input circuits of the slave stations and controls the facilities via the output circuits. Various status changes of the data transmission system, such as status changes of input circuits, are detected and the time at which the status change is detected, as well as pertinent address and status information, is stored in memory (not shown) and communicated to the CPU 10 of the master station for storage, display, and printing (col. 2, line 63 – col. 3, line 31). The master clock 17 of the master station and/or the slave clocks 27, 37 of the slave stations provide the time information that is stored with status changes. As such, the master clock and

slave clocks are synchronized so that status changes across the system can be arranged in a manner that is based on the time information (col. 10, lines 31-36).

Apparently, the Examiner views the typewriter 13 and associated components of Yamanaka as a document processing system (FIGs. 1, 3A, and 5A).

The CPU 10 records status changes of the slave stations 2 or 3 by operating the typewriter through the typewriter control circuit 16 (col. 3, lines 27-31). When a status change occurs, times of the slave clocks are also transmitted to the master station 1. For example, if a status change occurs at the contact being inputted to the input circuit 25 of the first slave station 2, CPU 20 transmits the time of the slave clock 27 to the master station 1 together with the address number of the relevant contact and the new status. The CPU 10 of the master station 1 stores such data to memory (not shown) and arranges the data in sequence of time added acquisition of data from other slave stations during a constant period and then outputs such data to the typewriter 13 through the typewriter control circuit 16 (col. 10, lines 24-36). Notably, neither the master nor the slave clocks synchronize or control operation of the CPU 10, typewriter 13, or typewriter controller 16 which the Examiner has construed as forming a document processing system.

Based on the foregoing, the explicit motivation to combine Miyawaki and Yamanaka identified by the Examiner (i.e., "one of ordinary skill in the art would have been motivated to make such a combination in order to provide a way to synchronize operations for practical use") simply does not support combining any form of master/slave clock synchronization taught by Yamanaka with operation of any document processing system that may be taught by either Miyawaki or Yamanka. In particular, this does not properly provide some suggestion or motivation to combine the master/slave clock synchronization taught by Yamanaka with operations of any controller of a marking engine and an associated resource that may be taught by Miyawaki. Therefore, the applicants respectfully submit that the obviousness rejections of claims 1-21 are improper because the examiner has not properly established some suggestion or motivation to combine Miyawaki and Yamanaka. Accordingly, the applicants respectfully request that the obviousness rejections of claims 1-21 be withdrawn. Under such circumstances, the applicants respectfully submit that claims 1-21 are currently in condition for allowance.

In the Alternative, Claims 1, 3, 6, 7, 10, 11, and 21 Patentably Distinguish Over the Combination of Miyawaki and Yamanaka.

As to rejection of independent claim 1 for obviousness over the combination of Miyawaki and Yamanaka, the Examiner has specifically identified findings 4.38-4.41 (Miyawaki) and findings 4.1-4.4 and 4.18 (Yamanaka). As to dependent claim 3, the Examiner has specifically identified finding 4.5 (Yamanaka). For dependent claim 6, the Examiner has specifically identified findings 4.6 and 4.7 (Yamanaka). As to dependent claim 7, the Examiner has specifically identified finding 4.8 (Yamanaka). For dependent claim 10, the Examiner has specifically identified finding 4.11 (Yamanaka). As to dependent claim 11, the Examiner has specifically identified finding 4.12 (Yamanaka).

In support of rejection of claim 1, the Examiner states that "Miyawaki discloses the system comprising a control bus [system bus 18], interconnecting the resource and controller [col. 4, ll. 8-11, ll. 35-39]" (finding 4.41). The applicants respectfully disagree. As shown in FIG. 2, the Miyawaki system bus 18 interconnects a CPU 11 with various other components (e.g., serial communication control unit(s) 16) within the copier controller 31 and with an interface 17 within the copier 1. Notably, the serial communication control units 16 provide the copier controller 31 with an interface to other equipment resources (e.g., operation panel, document feeder, finisher, and the like) (col. 4, lines 8-11). Therefore, the Miyawaki system bus 18 is not "interconnecting the resource and the controller" as recited in claim 1.

In further support of rejection of claim 1, the Examiner states that: i) "Yamanaka discloses a system comprising a controller, resource, and control bus with the synchronization details" (para. 7, page 8), ii) "Yamanaka discloses the system comprises a resource [slave station 2], including a slave clock [27] related to operational timing of the resource [slave station utilizes a slave clock to provide timing functionality to slave station components such as CPU 20 which inherently, requires a local timing input] and circuitry for receiving and processing the discreet clock synchronization interrupt signal [code sensing and receiving circuit 28 and CPU 20; col. 3, ll. 5-11; col. 7, ll. 12-17]" (finding 4.3) and iii) "Yamanaka discloses the system comprises a control bus [data transmission path 5], interconnecting the resource and the controller, for distribution the discrete interrupt signal [col. 2, ll. 25-28; col. 4, ll. 20-22]" (finding 4.4). The applicants respectfully disagree.

In general, Yamanaka discloses several embodiments of a data transmission and receiving system in the form of a Supervisory Control and Data Acquisition (SCADA) system that includes a master station 1 in communication with multiple remote slave stations 2, 3 (FIGs. 1, 3A, 3B, 5A, 5B). The master station serves as a control station and the slave stations provide input circuits 24, 34 and output circuits 25, 35 for two-way data transmissions to/from, for example, electrical power generating facilities, power transmission facilities, or power substation facilities of various electrical stations located within a broad region (Abstract; col. 1, lines 7-21; col. 2, lines 29-39). In this electrical station example, the master station monitors the facilities via the input circuits of the slave stations and controls the facilities via the output circuits. Various status changes of the data transmission system, such as status changes of input circuits, are detected and the time at which the status change is detected, as well as pertinent address and status information, is stored in memory (not shown) and communicated to the CPU 10 of the master station for storage, display, and printing (col. 2, line 63 – col. 3, line 31). The master clock 17 of the master station and/or the slave clocks 27, 37 of the slave stations provide the time information that is stored with status changes. As such, the master clock and slave clocks are synchronized so that status changes across the system can be arranged in a manner that is based on the time information (col. 10, lines 31-36).

Apparently, the Examiner views the typewriter 13 and associated components of Yamanaka as a document processing system (FIGs. 1, 3A, and 5A).

The CPU 10 records status changes of the slave stations 2 or 3 by operating the typewriter through the typewriter control circuit 16 (col. 3, lines 27-31). When a status change occurs, times of the slave clocks are also transmitted to the master station 1. For example, if a status change occurs at the contact being inputted to the input circuit 25 of the first slave station 2, CPU 20 transmits the time of the slave clock 27 to the master station 1 together with the address number of the relevant contact and the new status. The CPU 10 of the master station 1 stores such data to memory (not shown) and arranges the data in sequence of time added acquisition of data from other slave stations during a constant period and then outputs such data to the typewriter 13 through the typewriter control circuit 16 (col. 10, lines 24-36).

Notably, neither the master nor the slave clocks synchronize or control operation of the CPU 10, typewriter 13, or typewriter controller 16 which the Examiner has construed as forming a document processing system. Moreover, the

slave station 2 is not "a resource that transfers the sheet to the marking engine or receives the sheet from the marking engine" as recited in claim 1. Therefore, Yamanaka does not disclose a "resource" having the characteristics alleged by the Examiner in para. 7 and finding 4.3. As such, the Yamanaka data transmission path 5 is not interconnecting "a resource that transfers the sheet to the marking engine or receives the sheet from the marking engine" and the controller as recited in claim 1.

Therefore, Yamanaka does not disclose a "control bus" having the characteristics alleged in para. 7 and finding 4.4. Accordingly, based on the foregoing, the applicants respectfully submit that claim 1 and claims dependent thereon (including claims 3, 6, 7, 10, and 11) are currently in condition for allowance on these alternative grounds.

As to rejection of independent claim 21 for obviousness over the combination of Miyawaki and Yamanaka, the Examiner has specifically identified findings 4.2, 4.9, and 4.10 (Yamanaka). In support of rejection of claim 21, the Examiner states that: i) "Yamanaka discloses the system comprises a plurality of resources [slave stations 2 and 3], each resource including a slave clock [27 and 37] related to operational timing of the resource and logic for receiving the discrete interrupt signal [code sending and receiving circuit 28 and 38], processing the discrete interrupt signal [CPU 20 and 30], and synchronizing the slave clock with the master clock [col. 7, ll. 42-47] (finding 4.9) and ii) "Yamanaka discloses the system comprises electrical wiring [data transmission path 5] interconnecting the resources and the controller for distributing the discrete interrupt signal to the resources [col. 2, ll. 25-28; col. 4, ll. 20-22] (finding 4.10). The applicants respectfully disagree.

First, the Examiner has not specifically identified any reference that discloses or fairly suggests the "marking engine" element of claim 21. Additionally, as discussed above in the arguments that distinguish claim 1 from findings 4.3 and 4.4, neither the master nor the slave clocks in Yamanaka synchronize or control operation of the CPU 10, typewriter 13, or typewriter controller 16 which the Examiner has construed as forming a document processing system. Moreover, the slave stations 2, 3 are not resources that are "associated with transfer of the sheet to the marking engine or receipt of the sheet from the marking engine" as recited in claim 21. Therefore, Yamanaka does not disclose a "resource" having the characteristics alleged by the Examiner in finding 4.9. As such, the Yamanaka data transmission path 5 is not interconnecting "resources associated with transfer of the

sheet to the marking engine or receipt of the sheet from the marking engine” and the controller as recited in claim 21. Accordingly, based on the foregoing, the applicants respectfully submit that claim 21 is currently in condition for allowance on these alternative grounds.

In the Alternative, Claim 2 Patentably Distinguishes Over the Combination of Miyawaki, Yamanaka, and Shimoda.

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In the Alternative, Claims 4 and 8 Patentably Distinguish Over the Combination of Miyawaki, Yamanaka, and Lackman.

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As to rejection of claim 8 for obviousness over the combination of Miyawaki, Yamanaka, and Lackman, the Examiner has specifically identified findings 4.8 and 4.13 (Yamanaka) and 4.34 and 4.35 (Lackman). The applicants respectfully disagree at least as to findings 4.8 and 4.13. In finding 4.8, the Examiner states “Yamanaka discloses the circuitry in each resource includes a processor [CPU 20 and 30] for adjusting the slave clock associated with the resource to provide for compatibility with the controller [col. 7, ll. 42-47].” In finding 4.13, the Examiner states “Yamanaka discloses a document processing system comprising a plurality of resources [slave stations 2 and 3] [col. 7, ll. 3-5].”

As discussed above in the arguments that distinguish claim 1 from findings 4.3 and 4.4, neither the master nor the slave clocks in Yamanaka synchronize or control operation of the CPU 10, typewriter 13, or typewriter controller 16 which the Examiner has construed as forming a document processing system. Moreover, none of the slave stations 2, 3 are “a resource that transfers the sheet to the marking engine or receives the sheet from the marking engine” as recited in claim 1.

Claim 4 depends from claims 1, 6, and 7. Therefore, Yamanaka does not disclose “circuitry in each resource” having the characteristics alleged by the Examiner in finding 4.8. As such, the CPUs 20, 30 in the Yamanaka slave stations 2, 3 do not provide “compatibility between the resource and controller” as recited in claim 8. Furthermore, Yamanaka does not disclose “resources” having the characteristics alleged in finding 4.13. Accordingly, based on the foregoing, the applicants

respectfully submit that claim 8 is currently in condition for allowance in view of Miyawaki, Yamanaka, and Lackman on these alternative grounds.

In the Alternative, Claim 12 Patentably Distinguishes Over the Combination of Miyawaki, Yamanaka, and Einbinder.

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In the Alternative, Claims 5 and 9 Patentably Distinguish Over the Combination of Miyawaki, Yamanaka, and Cheung.

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In the Alternative, Claims 13-20 Patentably Distinguish Over the Combination of Miyawaki, Yamanaka, and Cheung.

As to rejection of independent claim 13 for obviousness over the combination of Miyawaki, Yamanaka, and Cheung, the Examiner has specifically identified findings 4.38-4.41 (Miyawaki), 4.1-4.4 and 4.13-4.17 (Yamanaka), and 4.19, 4.22-4.29, and 4.32 (Cheung). The applicants respectfully disagree at least: i) as to findings 4.41, 4.3, and 4.4 for the same reasons provided above that distinguish claim 1 from findings 4.41, 4.3, and 4.4 and ii) as to finding 4.13 for the same reasons provided above that distinguish claim 8 from finding 4.13. The applicants also respectfully disagree at least as to findings 4.16, 4.17, and 4.24-4.29.

First, in findings 4.16 and 4.17, the Examiner states the Yamanaka discloses certain operations involving the "resource." For example, finding 4.16 states that "Yamanaka discloses the method comprising generating a discrete clock synchronization interrupt signal in the controller and distributing the discrete interrupt signal to the resource via the control bus." However, as described above in distinguishing claim 1 from findings 4.3 and 4.4, Yamanaka does not disclose or fairly suggest operation of "a resource that transfers the sheet to the marking engine or receives the sheet from the marking engine" as recited in claim 15. Therefore, Yamanaka does not disclose a "resource" having the characteristics alleged by findings 4.16 and 4.17.

Moreover, in findings 4.24-4.29, the Examiner states the Cheung discloses certain operations involving the "resource." For example, finding 4.24 states that "Cheung discloses the method comprising sending a message from the resource to

the controller via the network to request the value [time U] saved for the master clock." However, Cheung does not disclose or fairly suggest operation of "a resource that transfers the sheet to the marking engine or receives the sheet from the marking engine" as recited in claim 15. Therefore, Cheung does not disclose a "resource" having the characteristics alleged by findings 4.24-4.29.

Furthermore, in finding 4.24, the Examiner states "Cheung discloses the method comprising sending a message from the resource to the controller via the network to request the value [time U] saved for the master clock [col. 2, ll. 66-67; col. 4, ll. 8-10]. Col. 2, lines 66-67 of Cheung reads as follows:

"A slave node sends a synchronization request at a time
t, according to its clock."

Col. 4, lines 7-11 of Cheung reads as follows:

"Next, Process A sends a message (4) to Process B,
which receives the message some time later. Process
B then obtains a time from its local clock, of a time U,
plus or minus a precision Q (6)."

Notably, Cheung discloses that Process B obtains a time from its local clock after it receives a message from Process A. Claim 13 recites "a) saving a value of the master clock in the controller" and "d) sending a message from the resource to the controller via the network to request the value saved for the master clock." Claim 13 is distinguished from the portion of Cheung cited by the Examiner because Process B (relating to the controller) does not save a value of its clock until after it receives the message from Process A (allegedly relating to the resource). In the claim, the value of the master clock in the controller is saved in a) and the value that was saved earlier is requested in d). Therefore, Cheung does not disclose the method alleged by finding 4.24.

Additionally, in finding 4.29, the Examiner states "Cheung discloses the method comprising adding the difference value [V-T] to the value saved for the master clock [U] to determine a synchronized value [col. 4, ll. 37-41; Q=0]. Col. 4, lines 37-41 of Cheung reads as follows:

"In summary, given the above sequence of messages, a
single round trip according to the PCS scheme
produces, for Process A, a new time $U+(V-T)/2$ plus or
minus a precision $Q+(V-T)/2$. The endpoints of this new

time interval, as of the present time, are $U-Q$ and $U+Q+V-T$."

Notably, Cheung discloses: i) subtracting a first value (T) for a slave clock from a second value (V) for the slave clock, dividing the first result by two (2), and adding the second result to a value (U) for a master clock to determine a synchronized value for the slave clock. This appears to be based on saving the master clock value (U) between the first and second slave clock values (T , V) because the delay between the master and slave clocks is averaged. In contrast, claim 13 recites "h) subtracting the first value from the second value to determine a slave clock difference value; and i) adding the difference value to the value saved for the master clock to determine a synchronized value for the slave clock and setting the slave clock to the synchronized value." Notably, Cheung teaches dividing the difference between first and second slave clock values by two (2) which is not required in the claimed method. Therefore, Cheung does not disclose the method alleged by finding 4.29.

Accordingingly, based on the foregoing, the applicants respectfully submit that claim 13 and claims dependent thereon (i.e., claim 14) are currently in condition for allowance in view of the combination of Miyawaki, Yamanaka, and Cheung on these additional grounds.

As to rejection of claim 15 for obviousness over the combination of Miyawaki, Yamanaka, and Cheung, the Examiner has specifically identified findings 4.2-4.4 and 4.13-4.17 (Yamanaka) and 4.19, 4.22-4.26, 4.30, and 4.32 (Cheung). The applicants respectfully disagree at least: i) as to findings 4.41, 4.3, and 4.4 for the same reasons provided above that distinguish claim 1 from findings 4.41, 4.3, and 4.4, ii) as to finding 4.13 for the same reasons provided above that distinguish claim 8 from finding 4.13, iii) as to findings 4.16 and 4.17 for the same reasons provided above that distinguish claim 13 from findings 4.16 and 4.17, and iv) as to findings 4.19 and 4.24-4.26 for the same reasons provided above that distinguish claim 13 from findings 4.19 and 4.24-4.26. The applicants also respectfully disagree at least as to finding 4.30.

In finding 4.30, the Examiner states "Cheung discloses the method comprising subtracting the value saved for the slave clock [time T] from the value saved for the master clock [time U] to determine an error value between the slave

clock and the master clock $[U-T]$ and using the error value in an adjustment algorithm to adjust the slave clock to be synchronized with the master clock [col. 4, ll. 37-41; utilize V and Q in algorithm]. Col. 4, lines 37-41 of Cheung reads as follows:

"In summary, given the above sequence of messages, a single round trip according to the PCS scheme produces, for Process A, a new time $U+(V-T)/2$ plus or minus a precision $Q+(V-T)/2$. The endpoints of this new time interval, as of the present time, are $U-Q$ and $U+Q+V-T$."

Notably, Cheung discloses: i) subtracting a first value (T) for a slave clock from a second value (V) for the slave clock, dividing the first result by two (2), and adding the second result to a value (U) for a master clock to determine a synchronized value for the slave clock. This appears to be based on saving the master clock value (U) between the first and second slave clock values (T, V) because the delay between the master and slave clocks is averaged. In contrast, claim 15 recites "g) subtracting the value saved for the slave clock from the value saved for the master clock to determine an error value between the slave clock and the master clock and using the error value in an adjustment algorithm to adjust the slave clock to be synchronized with the master clock." Notably, Cheung teaches dividing the difference between first and second slave clock values by two (2) which is not required in the claimed method. Therefore, Cheung does not disclose the method alleged by finding 4.30.

Accordingingly, based on the foregoing, the applicants respectfully submit that claim 15 and claims dependent thereon (i.e., claims 16-20) are currently in condition for allowance in view of the combination of Miyawaki, Yamanaka, and Cheung on these additional grounds.

CONCLUSION

For the reasons detailed above, it is submitted all claims remaining in the application (Claims 1-21) are now in condition for allowance. The foregoing comments do not require unnecessary additional search or examination.

No additional fee is believed to be required for this Amendment B. However, the undersigned attorney of record hereby authorizes the charging of any necessary fees, other than the issue fee, to Xerox Deposit Account No. 24-0037.

In the event the Examiner considers personal contact advantageous to the disposition of this case, he/she is hereby authorized to call Patrick R. Roche or Alan C. Brandt, at Telephone Number (216) 861-5582.

Respectfully submitted,

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